Self-esteem in depression and anxiety

van Tuijl, Lonneke

4. Self-Esteem Instability in Current, Remitted, Recovered, and Comorbid Depression and Anxiety

Abstract

Self-esteem (i.e., global self-esteem, ESE) has not only been observed as being generally low in major depressive disorder (MDD) and anxiety disorders (AD), but also being relatively unstable (i.e., low self-esteem stability; SE-S). Low SE-S, potentially regardless of ESE, may be a crucial maintaining factor of MDD and AD due to increased vulnerability to daily stress and minor forms of perceived rejection. However, few studies have looked at SE-S in clinical samples, and none have differentiated between remittance and recovery to see whether low SE-S is persistent shortly and long after an episode. Therefore, the present study compared self-reported SE-S across current MDD (n = 60), AD (n = 111), and comorbid MDD/AD (n = 71), remitted MDD (n = 41), AD (n = 29), and comorbid MDD/AD (n = 14), recovered MDD (n = 136) and AD (n = 98), and never MDD or AD comparison group (n = 382). SE-S and ESE were measured by means of a self-report questionnaire. The comparison group had higher SE-S than all other clinical groups. Once controlling for ESE, differences with current MDD/AD, remitted MDD, and recovered MDD/AD remained, but disappeared for the comorbid groups. The current findings are consistent with the view that not only enduring low self-esteem per se, but also high self-esteem reactivity to external events may contribute to the development or maintenance of affective disorders. Further, such reactivity appears to persist into remittance and recovery which may contribute to the increased risk of relapse.

Keywords: self-esteem, instability, anxiety, depression, comorbidity

Low global self-esteem (ESE[2]; i.e., the degree that one values oneself irrespective of specific context) is a prominent aspect in most explanatory and causal models of major depressive disorder (MDD) and anxiety disorders (AD; Beck, 2002). Indeed, research has consistently found low levels of ESE in clinical samples (e.g., Orvaschel et al., 1997; Silverstone, 1991). Low ESE appears to precede increases in symptomatology suggesting a potential causal role (Sowislo & Orth, 2013). Many studies show that ESE is mostly consistent over the life span, with slight increases observed from adolescence to young adulthood, and middle age, before starting to decrease in old age (Orth & Robins, 2014). However, the extent of change in levels of self-esteem from moment-to-moment appears to vary between persons. Self-esteem stability (SE-S) refers to the extent and frequency of short-term self-esteem fluctuations usually in response to mood states (Clasen et al., 2015; Roberts & Monroe, 1994) or positive and negative daily situations (Kernis et al., 1991). This is somewhat in keeping with diathesis-stress models of depression and anxiety that highlight that those who are more vulnerable will react stronger to external factors, or require less intensity to gain a reaction (Zuckerman, 1999). With regards to MDD and AD, some have argued that low levels of baseline self-esteem (i.e., low ESE) are not a prominent aspect per se (e.g., Franck & De Raedt, 2007), but rather the degree and frequency of fluctuation from this baseline level (i.e., low SE-S; also known as unstable self-esteem or self-esteem instability). While ESE might be considered to reflect trait self-esteem, given the relevant consistent level which provides a self-esteem baseline across situations, SE-S is relatively state-like, with possible reactions to external situations and stimuli, and the potential for it to swing.

Prior studies looking at SE-S have been conducted using student samples with a focus on depressive symptomatology, and the results are inconsistent. Some found that SE-S was a better predictor of depressive symptoms than ESE (Roberts & Monroe, 1992), some found an interaction

[2] For consistency in this thesis, ESE is used to denote global (trait) self-esteem as the two constructs are measured with the same questionnaires. However, in the absence of implicit measures, previous research normally does not specifically state the explicit aspect of global/trait self-esteem. This is not to say that ISE only occurs at the trait level per sé (see Chapter 6).

between SE-S and ESE in predicting symptoms (de Man et al., 2001; Kernis et al., 1991; study 1, Roberts et al., 1995), while others failed to find the predictive validity of SE-S over and above ESE (study 2 & 3, Roberts et al., 1995). Given that the mean level of depressive symptoms in student samples are often very low, it is unclear how these findings relate to clinical samples of MDD or AD based on the few clinical studies conducted. Low SE-S was observed in social anxiety disorder, but this disappeared when ESE was taken into account suggesting that ESE was key to differentiating between those with and without a social anxiety disorder (Farmer & Kashdan, 2014). Individuals with a current MDD reported lower SE-S than a never-depressed comparison group, and similar levels of SE-S as those who previously met the criteria for an MDD (Franck & De Raedt, 2007). However, ESE was not controlled for in this study. Longitudinal analysis revealed that SE-S was related to symptoms 6 months later in the never-depressed comparison group and former MDD, while ESE and an interaction between the two were not (Franck & De Raedt, 2007). Research conducted till now seem to support the hypothesis that SE-S plays a role in MDD, either in addition to, or in an interaction with, ESE. Given the lack of relevant studies, the case for AD is weak, and it is unclear as to whether MDD and AD may differ in level of SE-S. As comorbid MDD and AD have previously shown to have lower levels of ESE than those with either an MDD or AD only (van Tuijl et al., 2016), it is feasible that SE-S may also be lower in the comorbid group which may explain the poorer rate of remittance (Penninx et al., 2011). Therefore, the first aim of the present study was to compare levels of SE-S between MDD, AD, co-morbid MDD and AD, and a never depressed or anxious comparison group (i.e., the comparison group).

Many studies report a significant positive relationship between ESE and SE-S (Okada, 2010), which is in keeping with assumptions concerning the relationship between trait and state levels of self-esteem in the sociometer theory (Leary & Baumeister, 2000). This theory postulates that individuals with high (trait) self-esteem are less likely to lower their self-esteem in response to rejection (state self-esteem), due to high expectations of being accepted. Indeed, this is mirrored somewhat by the finding that those with higher ESE are more likely to report more stable levels of self-esteem (Okada,

2010). The second aim of the present study, therefore, was to compare SE-S across clinical groups and a comparison group while correcting for ESE. Further, to test the possibility that SE-S is relevant only when ESE is low, the interaction between ESE and SE-S is explored in predicting symptoms of depression and anxiety.

High relapse and recurrence rates are often reported in MDD and AD. This has fuelled several scarring hypotheses that argue that following periods of symptomatology, residual cognitions like low self-esteem remain that increase vulnerability for relapse (Lewinsohn et al., 1981). Indeed, lower levels of ESE were observed in remitted and recovered AD and MDD when compared to those who had never been diagnosed with a depressive or anxiety disorder (van Tuijl et al., 2016). The notion that remaining scars lie dormant and can be activated by mild sad moods (Gemar et al., 2001; Segal, Gemar, & Williams, 1999), should mean that recovered and remitted MDD and AD are likely to report lower SE-S than the comparison group, even when controlling for ESE. Former MDD showed lower SE-S than a never-depressed comparison group, and similar levels as current MDD (Franck & De Raedt, 2007). However, the former MDD group did not differentiate between those who were in remittance (i.e., recently experienced an episode) and those who were recovered. It is feasible that scars continue to heal after an episode of MDD. Further, no studies have included clinical groups of remitted and recovered AD. Therefore, the present study differentiated within the clinical groups (MDD, AD and comorbid) between those who currently met the criteria for the disorder, those who were current in remission, and those who had recovered (for MDD and AD only).

Method

Participants

Participants were recruited from community, primary care and mental health organisations into the Netherlands Study of Depression and Anxiety (NESDA; www.nesda.nl/) if they currently had a depressive disorder or AD (n = 1701), were at risk of developing a disorder (e.g., family member with a depression) or had a life-time diagnosis (n = 907). A further 373 participants with no history of a depressive or anxiety disorder were recruited

as a comparison group. Baseline measures took place in 2004-2007 (N = 2981), and have been followed up biannually on several measurements. At baseline, exclusion criteria were: a) Primary diagnosis of other psychiatric disorders such as psychotic disorder, an obsessive-compulsive disorder, a bipolar disorder, or a severe addiction; b) Non-fluent command of the Dutch language (Penninx et al., 2008). The present study makes use of data collected at the six-year follow-up. There was a 24% attrition rate at this wave since baseline (N = 2256 remaining), and 1799 received the self-esteem measures (age range 23 – 72, M = 48.05, SD = 13.18; 63.6% female). Incomplete participation (i.e., no self-esteem measures given; n = 457) occurred for various technical and practical reasons (e.g., participation via telephone). A further 83 participants were excluded as they met the criteria for a bipolar disorder during the study, or reported an alcohol dependence since the last interview. All participants provided written consent, and ethical approval was granted by all participating universities.

The same clinical groups were used as in van Tuijl et al., 2016 (and Chapter three). To recap, clinical groups were formed based on answers given on the Composite International Diagnostic Interview (v2.1; CIDI; Robins et al., 1988; Wittchen, 1994). The CIDI is a semi-structured interview conducted by trained staff to determine depressive and anxiety disorders. Diagnosis of MDD, dysthymia, panic disorder (with and without agoraphobia), generalized anxiety disorder, social anxiety and agoraphobia were determined based on the criterion outlined in the DSM-IV. Information concerning disorder diagnosis and recency (when symptoms ceased) was used to form the different clinical groups (for more detail see van Tuijl et al., 2016). In brief, MDD and AD clinical groups were split by those currently in an episode (diagnosis in past month), those in remission (an episode that had ended in the last six - one month), and those recovered (an episode in

the last seven years – six months)[3]. In order to establish relatively pure MDD, those who had also met the criteria for AD since the last interview were excluded (n = 162). Likewise, participants who had a current AD and also met the criteria for any depressive disorder (e.g., MDD, dysthymia) since the last interview were excluded (n = 123). Those in the recovered AD or MDD groups had no history of MDD (and dysthymia) or AD, respectively. Current and remitted comorbid AD and MDD groups were also formed based on the same criteria as the MDD and AD groups. Participants who have no history of AD, MDD or dysthymia formed the comparison group. The upper half of Table 4.1 provides an overview of the demographics and size of each group.

Measures

Beck Anxiety Inventory (BAI; Beck et al., 1988). The BAI is a self-report questionnaire containing 21 anxiety symptoms. The degree of disturbance in the past week was answered on a 4-point Likert scale from 1 (*Not at all*) to 4 (*Severely [I could barely stand it]*). Higher total scores were indicative of more anxious symptoms. Missing answers were replaced with participant's mean response (n = 47). From the 1799 participants, 33 participants were excluded from any analysis involving the BAI (29 failed to return the questionnaire and four had more than nine missing answers). The BAI showed excellent internal reliability across all those without missing answers (n = 2084; Cronbach's α = .92).

Inventory of Depressive Symptomatology – self-report (IDS: Rush et al., 1986). A self-report IDS was used to measure the severity of depressive symptoms in the last week, based on the DSM-IV criteria for MDD. Twenty eight items (e.g., "Feeling sad") were answered with four options where "0" indicated no depression (e.g., "I do not feel sad") and "3" referred to a severe depressive symptom (e.g., "I feel sad nearly all the time").

[3] We used these cut-offs as these were more readily available within the study. It should be noted that what defines, for example, a depression in remission varies across studies. Frank et al. (1991) recommends that remission be considered as a depression-free period of 2-6 months, with longer than 6 months considered a recovery. Our cut-offs are not too far from this. Cut-offs for ADs are dependent on the type of AD, however we apply the same cut-offs as used for MDD for consistency when comparing the groups and creating comorbid groups.

Higher total scores were indicative of relatively severe depressive symptomatology. From the 1799 participants, 32 were excluded from any analysis involving the IDS (29 failed to return the questionnaire and three had too many missing answers [>6 items]). The IDS showed excellent internal reliability across all those without missing answers (n = 2150; Cronbach's α = .90).

Rosenberg Self-Esteem Scale (Rosenberg, 1989). A self-report questionnaire containing 10 items was used to measure global self-esteem. Answers were given on a 4-point Likert scale from 1 (*strongly agree*) to 4 (*strongly disagree*). Higher scores were indicative of higher explicit self-esteem. Excellent internal reliability was observed in the present study (Cronbach's α = .92).

Self-Esteem Stability. Two items from a five-item Self-Esteem Instability Scale were administered to measure self-esteem stability: "How much I value myself is subject to changes" and "How much I value myself is stable across several situations at various times"[4]. A four-item version was previously validated (Raes & Gucht, 2009). Answers to both questions were answered on a 5-point Likert scale from 1 ("completely does not apply to me") to 5 ("completely applies to me"). Higher scores were indicative of more stable self-esteem, based on total scores following the reversal of the answer to the first question. The two questions were significantly correlated, r(1797) = .38, p <.001. The relatively low correlation indicated that both questions were also partly complementary.

[4] In the interest of keeping NESDA measurements as concise as possible, two items were selected based on face validity that they related to the conceptual understanding of self-esteem stability, and were not completely overlapping. As such, a positively phrased item and a negatively phrase item were selected. Excluded items were "The extent to which I value myself may vary at different times", "A certain event can make me value myself more, or less than how much I valued myself before the event." and "I often switch between 'feeling extremely positive about myself' and 'seeing only the bad things about myself, and feeling like a failure".

Procedure

NESDA assessments take between three and five hours, and are completed in one sitting (see Penninx et al., 2008). Assessments contain computer tasks, self-report questionnaires, interviews, and biological measures carried out by trained staff. Participants received travel expenses and a 15-euro gift certificate.

Statistical Analysis

Bivariate correlations between SE-S and ESE, IDS, and BAI were calculated. Other possible correlations have been reported previously (chapter 3; van Tuijl et al., 2016). In the first part of the analysis, an ANOVA was conducted to compare SE-S across groups (i.e., current/ remitted/recovered MDD, current/remitted/recovered AD, current/remitted comorbidity and the comparison group). This analysis was then repeated with ESE as a covariate. In the second part of the analysis, two multiple regression analysis were conducted to predict variance in IDS scores (n = 1574) and variance in BAI scores (n = 1572). In both models, ESE scores and SE-S scores (both standardized) were entered at step 1. At step 2, the interaction between standardized ESE and SE-S scores was entered. Following a residual analysis, extreme residuals (±3.3) were removed before re-running the analysis to improve the fit of the model. Two-way interactions were probed using a method outlined by Dawson (2014), and Aiken and West (1991). Slopes were tested at ± 1 SD of ESE.

Results

Descriptives

Mean age, BAI, IDS, ESE, and SE-S scores, and the percentage females, per group, are presented in Table 4.1. Based on Spearmans Rho, SE-S scores were significantly related to ESE, $\rho(1714) = .67$, $p<.001$, IDS, $\rho(1685) = -.51$, $p <.001$, and BAI, $\rho(1684) = -.44$, $p<.001$. In other words, relatively high SE-S was associated with higher ESE, and less depression and anxiety symptomatology. Previous missing data analysis highlighted that those who did not receive self-esteem measures (n = 457) did not differ in age, but did

have higher BAI (*d* = 0.28) and IDS (*d* = 0.25) scores than completers (n = 1799; van Tuijl et al., 2016).

To explore differences in SE-S between types of AD, a one-way ANOVA was conducted. Participants were excluded from this analysis if another AD was present in the previous six months (i.e., comorbidity within AD). Groups were formed based on the current presence of a social anxiety disorder (n = 35), panic disorder (with or without agoraphobia; n = 21), agoraphobia (n = 26), and general anxiety disorder (n = 9). Results indicated that there was no difference between AD types in SE-S, F(3, 87) = 1.31, p = .28, partial η^2 = .04, thus supporting one current AD group incorporating all AD types. Conclusions were the same both when BAI scores and ESE scores were statistically controlled for.

Self-Esteem Stability between Groups

A one-way ANOVA comparing scores on the SE-S across groups was significant, F(8.941) = 45.82, *p* <.001. Levene's test was significant (*p* = .03), and group sizes were unequal, thus Games-Howell post-hoc ANOVA comparisons were conducted. The comparison group had higher SE-S than all current and remitted clinical groups (*d*'s 1.04 – 1.60), and those who had recovered from MDD (*d* = 0.66, 95% CI [0.48, 0.99]) and AD (*d* = 0.78, 95% CI [0.60, 1.11]). Those who had recovered from MDD, and those who had recovered from AD, had higher SE-S than all other clinical groups (*d*'s 0.44 - 0.90) apart from remitted AD (*p* = .64 & *p* = .91, respectively). Recovered MDD and AD did not differ from one another in SE-S (*p* = .999). There were no further differences (*p*'s > .14).

The one-way ANOVA was repeated with ESE as a covariate, to see whether earlier differences between SE-S remained when correcting for ESE, and was significant, F(9,932) = 97.35, *p* <.001, partial η^2 = .49. With ESE as a significant covariate, F(1,932) = 366.12, *p*<.001, partial η^2 = .28, there was a significant effect of group, F(8,932) = 6.42, *p*<.001, partial η^2 = .05. As Levene's test was significant, F(8, 933) = 2.36, *p* = .02, and group sizes unequal, more conservative Bonferroni post-hoc ANCOVA comparisons were conducted (estimated marginal means reported in Table 4.1). In correcting for differences in ESE, the comparison group still had higher SE-S than

current MDD (p=.01), remitted MDD (p<.001), current AD (p=.002), recovered MDD (p=.001) and recovered AD (p = .01). There were no further differences (p's >.08).

Interaction between SE-S and ESE, and Symptomatology

In predicting symptoms of depression, seven extreme residuals were removed before running the analysis. With the inclusion of ESE and SE-S scores at step one, the model was significant, F(2, 1677) = 755.96, p<.001 and predicted 47% of variance in IDS scores (adjusted R^2 = .47). At this step, both ESE (B = -6.93, SE = .25, p<.001, semi-partial r = -.49) and SE-S (B = -0.62, SE = .25, p = .01, semi-partial r = -.04) were significant coefficients in the model. With the inclusion of the interaction between SE-S and ESE, the model improved, F-change (1, 1676) = 17.08, p<.001, and now predicted 48% of variance in scores (adjusted R^2 = .48; final model - F (3, 1676) = 514.50, p <.001). Both ESE (B = -6.79, SE = .25, p<.001, semi-partial r = -.48) and SE-S scores (B = -0.78, SE = .25, p = .002, semi-partial r = -.06) remained significant coefficients. Also the interaction between ESE and SE-S was a significant factor in the model, B = 0.77, SE = .19, p<.001, semi-partial r = .07. The interaction is plotted in Figure 4.1, and simple slopes revealed that when ESE was high (+1 SD), there was no difference in IDS score across low/high SE-S, gradient of slope = -0.01, t = -.04, p = .97. However, when ESE was low (-1 SD), the slope was significant, gradient of slope = -1.55, t = -4.63, p <.001, suggesting that those with lower SE-S reported higher IDS scores than those with higher SE-S.

In predicting symptoms of anxiety, 21 extreme residuals were removed before rerunning the analysis. At step one, the model was significant, F(2, 1662) = 355.27, p<.001, and predicted 30% of variance in BAI scores (adjusted R^2 = .30). Both ESE (B = -3.42, SE = .19, p<.001, semi-partial r = -.37) and SE-S scores (B = -0.58, SE = .19, p = .002, semi-partial r = -.06) were significant coefficients in this model. With the inclusion of the interaction between SE-S and ESE, improved the model slightly, F-change (1, 1661) = 4.59, p = .03, and still accounted for 30% of variance in BAI scores (adjusted R^2 = .30; final model - F(3, 1661) = 238.89, p<.001). Both ESE, B = -3.67, SE = .19, p<.001, semi-partial r = -.36, and SE-S scores, B = -0.64, SE =

.19, p = .001, semi-partial r = -.07, remained significant coefficients in the model. The interaction between ESE and SE-S was also significant, B = 0.30, SE = .14, p = .03, semi-partial r = .04, and is plotted in Figure 4.2. Simple slopes revealed that when ESE was high (+1 SD), there was no difference in BAI score across low/high SE-S (gradient of slope = -0.34, t = -1.53, p = .13). However, when ESE was low (-1 SD), the slope was significant (gradient of slope = -0.95, t = -3.71, p <.001), suggesting that those with lower SE-S reported higher BAI scores than those with higher SE-S.

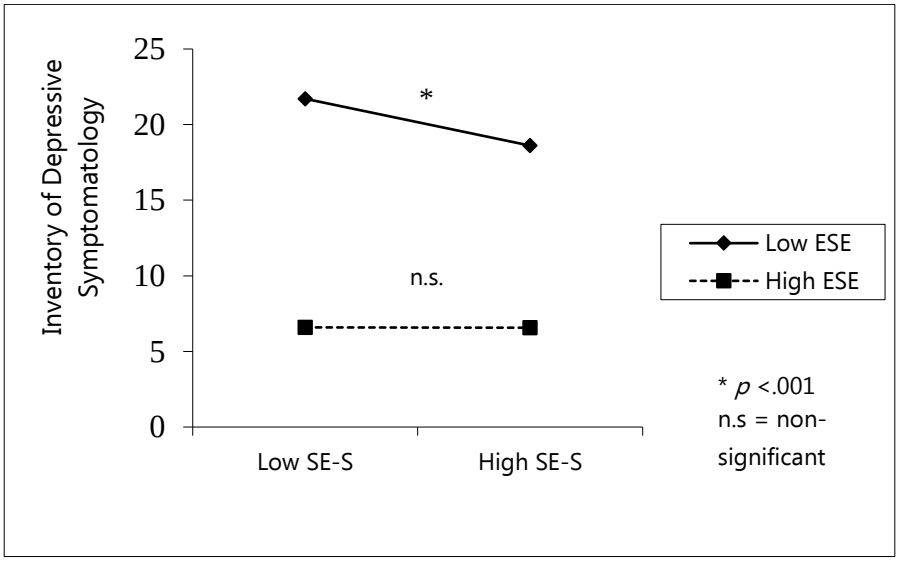

Figure 4.1. The two-way interaction between high and low (± 1 SD) ESE (global self-esteem as measured by Rosenberg Self-Esteem Scale) and SE-S (self-esteem stability) scores in the prediction of depression symptoms (N = 1680).

Table 4.1

Means (& standard deviations; unless stated otherwise) of demographics and variables per group

	Major Depressive Disorder (MDD)			Anxiety Disorder(s) (AD)			Comorbid MDD & AD		Comparison
	Current (n = 60)	Remitted (n = 41)	Recovered (n = 136)	Current (n =111)	Remitted (n = 29)	Recovered (n = 98)	Current (n =71)	Remitted (n = 14)	Non-Clinical (n = 383)
Age	49.05 (12.65)	49.02 (12.84)	46.95 (13.29)	48.85 (12.23)	45.45 (12.12)	47.56 (13.83)	46.90 (11.17)	44.93 (12.39)	48.23 (14.53)
Female (%)	68.3	70.7	61.8	70.3	75.9	57.1	69	71.4	57.1
BAI	12.85 (8.04)	9.38 (6.09)	5.47 (5.15)	14.03 (9.63)	11.17 (8.24)	6.16 (4.79)	20.32 (10.17)	9.08 (6.65)	2.74 (3.48)
IDS	28.05 (9.82)	19.83 (7.51)	12.26 (8.99)	20.74 (10.59)	16.14 (8.45)	11.42 (7.01)	33.86 (10.85)	18.17 (8.16)	5.46 (4.74)
ESE	26.13^{e} (5.24)	27.71^{ed} (4.53)	32.45^{c} (4.24)	28.44^{ed} (5.11)	30.31^{cd} (5.23)	31.65^{c} (4.57)	23.07^{b} (4.98)	27.50^{ed} (3.88)	35.18^{a} (3.98)
SE-S	5.25 (1.60)	5.22 (1.57)	6.77 (1.94)	5.86 (1.70)	6.14 (1.60)	6.60 (1.67)	5.15 (1.65)	5.14 (1.23)	7.97 (1.78)
SE-S EMM	6.37 (.20)	6.02 (.23)	6.58 (.13)	6.50 (.14)	6.39 (.28)	6.58 (.15)	6.92 (.20)	5.98 (.40)	7.21 (.09)

Note. BAI = Beck Anxiety Inventory; IDS = Inventory of Depressive Symptomatology; ESE = Global self-esteem as measured by the Rosenberg Self-Esteem Scale; SE-S = Self-Esteem Stability; SE-S EMM = SE-S estimated marginal means adjusted for group differences in ESE; Current = episode in the past month; Remitted = episode ended one – six months ago; Recovered = episode ended 6 months – 7 years ago. Adapted from "Implicit and Explicit Self-Esteem in Current, Remitted, Recovered, and Comorbid Depression and Anxiety", by L. A. van Tuijl, K. A. Glashouwer, C. L. H. Bockting, J. N. Tendeiro, B. W. J. H. Penninx, and P. J. de Jong (see Chapter 3).

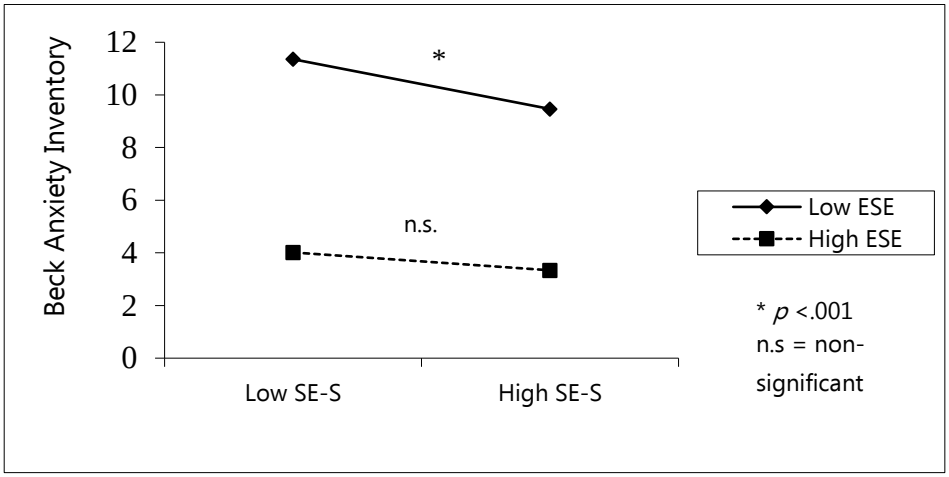

Figure 4.2. The two-way interaction between high and low (± 1 SD) E-SE (global self-esteem as measured by Rosenberg Self-Esteem Scale) and SE-S (self-esteem stability) scores in the prediction of anxiety symptoms (N = 1665).

Discussion

The main findings of the present study can be summed as follows: i) The comparison group showed higher SE-S than all current, remitted, and recovered clinical groups, whereas recovered AD and MDD showed higher SE-S than all other clinical groups; ii) For current MDD, current AD, remitted MDD, recovered MDD, and recovered AD, these differences in SE-S with the comparison group remained when correcting for ESE; ii) Particularly when ESE was low, symptoms of both depression and anxiety were related to low SE-S.

Self-esteem stability was lower in all clinical groups in contrast to the comparison group. This is in keeping with the previous studies who have found low SE-S in current MDD and AD (Farmer & Kashdan, 2014; Franck & De Raedt, 2007), and is consistent with previous studies focusing on analogue student samples (e.g., de Man et al., 2001). = The current findings extend those of Franck and De Raedt (2007) by highlighting that even when correcting for ESE, SE-S was still lowered in current MDD, remitted MDD and

recovered MDD. Moreover, low SE-S was also observed in the current AD group in the present sample, even when correcting for ESE. The latter is in contradiction with Farmer and Kashdan (2014) who found that the relevance of SE-S in social anxiety disorder disappeared when taking ESE into account. It seems unlikely that the conflicting findings are explained by broader inclusion criteria for AD of the present study since individuals with social anxiety disorder did not differ in SE-S from the other ADs. It is possible that Famer and Kashdan had less power to detect an effect given the smaller sample size, as in the present study the effect sizes were relatively small. Also, in Farmer and Kashdan's sample, 17.5% of the socially anxious individuals had a comorbid depression. Differences in comorbidity on SE-S were not compared. As such, the presence of a comorbid MDD may (also) account for the difference in findings, particularly as SE-S between the comparison group and comorbid group did not differ when controlling for ESE.

Differences in SE-S between comorbid MDD/AD and the comparison group disappeared once controlling for ESE, but remained for those with relatively pure MDD or AD. It is not entirely clear why lower SE-S was observed in MDD or AD, but not in comorbid MDD or AD. One explanation may lie in differences in ESE. In a previous study, comorbid MDD and AD was found to have lower ESE than both those with MDD and those with AD, potentially as a result of more persistent and severe symptomatology (van Tuijl et al., 2016). It is feasible that when ESE is already extremely low, there is little room for fluctuations. In other words, self-esteem cannot drop any lower. Likewise, those with relatively high ESE, like those in the comparison group, also have little room to fluctuate. As a consequence, the extent of instability might be similar between those with very high ESE (i.e., comparison group) and those with very low ESE (i.e., comorbid group).

The combination of low ESE and high SE-S may also explain the treatment-resistant nature of comorbidity (Penninx et al., 2011). Some self-esteem flexibility was argued to be vital for a psychoeducational group treatment to be effective, as those with lower SE-S pre-treatment showed a larger reduction in depressive symptoms (Roberts, Shapiro, & Gamble, 1999). As such, findings suggest that a self-esteem intervention is especially

necessary in comorbidity to not only increase ESE that is especially low, but also to introduce some flexibility into self-evaluations which may make other treatments more effective. Such an intervention may not be necessary for those with purer forms of MDD or AD, as common treatments such as cognitive behavioural therapy already appear to increase ESE in singular forms of these disorders (e.g., Richardson, Stallard, & Velleman, 2010), although it is unclear whether SE-S also increases. As such, it seems to be vital to differentiate between comorbid MDD/AD and relatively pure disorders as comorbidity may be more than simply the sum of MDD and AD symptoms.

In the present study, differences in SE-S were observed between the comparison group and remitted MDD, remitted AD, remitted comorbid, recovered MDD and recovered AD. These findings are in keeping with the lower SE-S observed in the former MDD group by Franck and De Raedt (2007). However, as we did not exclude recovered and remitted MDD with residual symptoms, Franck and De Raedt's findings are extended to highlight that low SE-S is present in both remitted and recovered MDD, more broadly. The presence of low SE-S in remittance and recovery could be explained in terms of a remaining SE-S scar that was a consequence of the episode. However, given the cross-sectional nature of the current study, it is just as feasible that this "scar" is a remaining prodromal factor that was present before the episode in question, or a preceding symptom of the next episode. Future longitudinal research should look at whether the extent of low SE-S following MDD and AD is predictive of (time to) relapse. Furthermore, scars have been hypothesised to lie dormant till activated by life events or stressors (Segal et al., 1999). Such stressors need not necessarily be major in order to (re-)activate the scars as self-esteem may fluctuate in response to subtle changes in mood and daily (minor) life events (Clasen et al., 2015; Kernis et al., 1991; Roberts & Monroe, 1994). As such, future longitudinal research may want to include a measure of (minor) stressors to see whether low SE-S specifically in the presence of stressors predicts relapse.

Further support for the differential role of ESE and SE-S in MDD and AD comes from the analysis of explaining variance in symptoms across both the clinical groups and the comparison group. For both, depressive and

anxiety symptomatology, SE-S explained variance over and above ESE, although ESE did explain more variance than SE-S. Consistent with the findings by De Man, Gutiérrez and Sterk (2001), particularly when ESE was low, SE-S was negatively related to depressive and anxiety symptoms. Previously, this has been taken to suggest that high SE-S is to some extent a protective factor when ESE is low. Indeed, those with more stable levels of low ESE may have short-term coping mechanisms when there are threats against self-esteem, while those who are reactive to threats may find it more difficult to deal with the resulting changes in self-esteem. It is also feasible to argue that fluctuations when self-esteem is high are not problematic because this may all occur within a positive range. Sociometer theory of self-esteem suggests that those possessing high self-esteem are less likely to react to instances of rejection given that acceptance is anticipated (Leary & Baumeister, 2000), as such, fluctuations may occur a lot less when ESE is high. Indeed, several studies have highlighted that self-esteem moderated responses to rejection (Ford & Collins, 2010). Further, many have reported a positive correlation between ESE and SE-S, suggesting that those with higher self-esteem are less likely to report instability (Okada, 2010), and this was also the case in the present study. Therefore, although there is support for distinction between ESE and SE-S, the two also appear to be related.

Symptom severity is often found to be a lot higher in comorbid depression and anxiety (Penninx et al., 2011). As such, there is some contradiction between the observed association between symptoms and SE-S, and the lack of support that the comorbid group and the comparison group differ on the latter. As the analysis dealt with depression and anxiety symptoms separately, it is plausible that in the presence of both symptoms, SE-S explains no additional variance over and above ESE. This is in keeping with theories that comorbid depression and anxiety is more than a sum of the parts (Kleiman & Riskind, 2012), and with previous observations of differences in another facet of self-esteem (implicit self-esteem) between comorbidity and the comparison group, but not with those with more singular forms of depression or anxiety (van Tuijl et al., 2016; chapter 3). These findings only further justify accounting for the presence of comorbidity within clinical groups. Future studies should adopt more

complex models as there are several ways in which comorbidity may occur (e.g., depression occurring first with anxiety symptoms developing second, and vice versa). Further it might be pivotal to acknowledge more complex associations between symptoms, ESE and SE-S, which may not be entirely linear. It is feasible that SE-S is particularly relevant in distinguishing individuals at risk of developing depression or an anxiety disorder when ESE levels are mid to low range, and not extremely low or high.

Another key direction for future studies would be to address the assumption that fluctuations in self-esteem are likely to be equal across negative and positive events. That is, whether self-esteem that is sensitive to negative events like rejection is equally as sensitive to positive events like acceptance. SE-S quantified by the standard deviation of multiple measurements or self-reported questionnaires like the one used in the present study assume this. However, in most contexts "bad is stronger than good" (Baumeister, Bratslavsky, Finkenauer, & Vohs, 2001), in that negative aspects (e.g., bad feedback) have a larger psychological impact than positive aspects (e.g., good feedback). While a previous study has highlighted that the extent that self-esteem decreases in reaction to sad mood is related to increases in depressive symptomatology (Clasen et al., 2015), it remains to be seen whether happy mood is as equally effective in raising self-esteem, and thus, reducing depressive symptoms. Given the potential presence of anhedonia in depression, it is feasible that the lack of positive-mood reactive self-esteem also plays a role in depression. This may also partially explain why ESE is low.

Limitations

Most previous studies looking at SE-S have quantified this construct based on the standard deviation of multiple self-report measures of ESE. This method may be less affected by self-report biases which assumedly would influence each measurement moment to a similar extent thus having a reduced influence on the standard deviation derived. The method employed in the current study would more likely be subject to self-report biases, and such bias would also affect measures of ESE to a similar degree (e.g., social desirability bias would presumably affect two measures concerning the self

to an equal extent). However, even when controlling for differences in ESE, differences in SE-S were still observed (albeit with small effect sizes), suggesting the measure of SE-S tapped into something else. Further, quantifying SE-S as is done in the present study also eases comparability. Given that previous studies have varied in how often they provide multiple measures of ESE (e.g., from weekly to daily), it is unclear what influence this may have on scores. Further, it is not clear how skewed scores should be dealt with (e.g., participants who often score high, or low), or extreme outliers (e.g., a rare good or bad day), both of which influence the mean, and subsequently the standard deviation (Baird, Le, & Lucas, 2006).

The present study adopted a cross-sectional design, and as such, the direction of the relationship between SE-S and depression and anxiety cannot be established. An important next step would be to test this association longitudinally to see whether low SE-S might be a vulnerability factor preceding increases in symptoms. In employing a longitudinal design, negative life events can also be recorded as many studies using student populations suggest that life stressors, particularly of an interpersonal nature, decrease SE-S which may increase subsequent depressive symptomatology (Hayes, Harris, & Carver, 2004). Such a design may also help differentiate between random fluctuations in self-esteem, and fluctuations in response to daily events.

In conclusion, the present study underlines the presence of self-esteem instability in clinical groups of MDD and AD. The current findings are consistent with the view that not only enduring low self-esteem per se, but also high self-esteem reactivity to external events may contribute to the development or maintenance of affective disorders. Further, such reactivity appears to persist into remittance and recovery which may contribute to the increased risk of relapse. From a clinical perspective, these findings highlight that interventions should not only aim to increase self-esteem, but also ensure that a stable level of self-esteem is achieved. If this is not the case, then a minor perceived rejection may undo any intervention effects.